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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/797,218	03/09/2004	Yoshinori Ohsaki	1232-5324	4188
27123	7590	11/08/2005		
MORGAN & FINNEGAN, L.L.P. 3 WORLD FINANCIAL CENTER NEW YORK, NY 10281-2101			EXAMINER NGUYEN, HUNG	
			ART UNIT 2851	PAPER NUMBER

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/797,218

Applicant(s)

OHSAKI, YOSHINORI

Examiner

Hung Henry V. Nguyen

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 October 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 October 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 1-5, 11, 12, 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al (U.S.Pat. 6,559,465) in view of Mori et al (U.S.Pat. 5,309,197).

With respect to claims 1-5, 11, 12 and 14, Yamada et al (figure 1) discloses an exposure apparatus and corresponding method for exposing a predetermined pattern formed on a reticle (2) onto a substrate (4) through a projection optical system (1) while the reticle and the substrate are scanned in synchronous with each other and comprising substantially all of the limitations of the instant claims such as: a measuring mechanism (10-19) for measuring a position of an image plane of the projection optical system at a plurality of measurement positions different from each other with respect to the scanning direction and a correcting mechanism (25, 27) for correcting the tilt of the image plane of the projection optical system based on measurements obtained by the measuring mechanism (see col.5, lines 34-59). Yamada et al further teaches the calculating a tilt of the image plane as well as the calculating a curvature/height of the image plane being obtained and corrected (see col.15, lines 12-23). Yamada does not expressly disclose that the position of the image plane is measured by detecting a light through the projection optical system. However, this in itself does not provide any inventive steps. Mori et al (figure 1)

Art Unit: 2851

discloses an exposure apparatus and corresponding method including a detecting system (11-18) for detecting a light through a projection optical system for measuring a position of an image plane of the projection optical system at a plurality of different easement positions. In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Yamada and Mori to obtain the invention as specified in the above mentioned claims of the present invention. It would have been obvious to a skilled artisan to employ the TTL detection optical system as taught by Mori et al into the apparatus/method of Yamada for the purpose of detecting the position of the image plane whereby a tilt of the image plane can be corrected and the quality of the images to be printed is greatly improved.

2. Claims 1-5, 7-14 are rejected under 35 U.S.C. 103 (a) as being unpatentable over Nishi (U.S.Pat. 6,813,000) in view of Kenmoku (U.S.Pat. 6,281,966).

With respect to claims 1-5, and 7-14, Nishi (figure 1) discloses an exposure apparatus and corresponding method for exposing a predetermined pattern formed on a reticle (R) onto a substrate (W) through a projection optical system (PL) while the reticle and the substrate are scanned in synchronous with each other, comprising all of the limitations of the instant claims such as: a measuring system for measuring a position of an image plane of the projection optical system at a plurality of different measuring positions with respect to the scanning direction (see col.8, lines 57-65) and a correcting device for correcting a tilt of the image plane of the projection optical system based on measurements obtained by the measuring (see col.9, lines 1-14). Furthermore, Nishi teaches the plurality of measurement positions in the measuring steps

Art Unit: 2851

are at least three positions which are not arranged on a straight line and outside the exposure area (see figure 8) and the correcting step including correction of a tilt of the image plane of the projection optical system in the scanning direction based on the measuring step (see col.20, lines 26-37). Nishi lacks to show the image plane being measured by detecting light through the projection optical system. Kenmoku teaches an exposure apparatus having a focus detecting system of TTL (through the lens) for detecting the position of image plane of the projection optical system by detecting the light through the projection optical system (see figure 1 and col.6, lines 37-45). In view of such teachings, it would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Nishi and Kenmoku to obtain the invention as specified in the instant claims of the present invention. It would have been obvious to a skilled artisan to employ the TTL detection optical system as taught by Kenmoku et al into the apparatus/method of Nishi for the purpose of detecting the position of the image plane whereby a tilt of the image plane can be corrected and the quality of the images to be printed is greatly improved.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2851

4. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nishi (U.S.Pat.6,813,000) in view of Kenmoku (U.S.Pat. 6,281,966) and further in view of Yasuda et al (U.S.Pat. 6,549,271).

With respect to claim 6, Nishi as modified by Kenmoku discloses an exposure apparatus and corresponding method comprising substantially all of the limitations of the instant claim as discussed except for the step of driving one an optical element included in the projection optical system in an optical axis direction of the projection optical system for correcting the tilt of the image plane of the projection optical system. Yasuda teaches correcting device (104, 118) for driving one or some of the lens elements of the projection system in an optical axis direction of the projection optical system for correcting a tilt of the image plane of the projection optical system. It would have been obvious to one having ordinary skill in the art at the time the invention was made to combine the teachings of Nishi, Kenmoku and Yasuda to obtain the invention as specified in the instant claims. It would have been obvious to a skilled artisan to employ the correcting device/step of driving of an optical element included in the projection optical system in an optical axis direction of the projection optical system, as suggested by Yasuda onto the apparatus/method of Nishi as modified by Kenmoku for the purpose of correcting a tilt of the image plane and improving the quality of the printed image on the substrate.

Response to Amendment/Argument

5. Applicant's amendment filed October 27, 2005 has been entered. In dependent claims 1, 9, and 11 have been amended. With respect to prior art rejections, Applicant's arguments have

Art Unit: 2851

been carefully reviewed in conjunction with the amendment but they are not found persuasive and have been traversed in view of new ground rejections as set forth above.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung Henry V. Nguyen whose telephone number is 571-272-2124. The examiner can normally be reached on Monday-Friday (First Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Hung Henry V Nguyen
Primary Examiner
Art Unit 2851

hvn
11/5/05

11/11

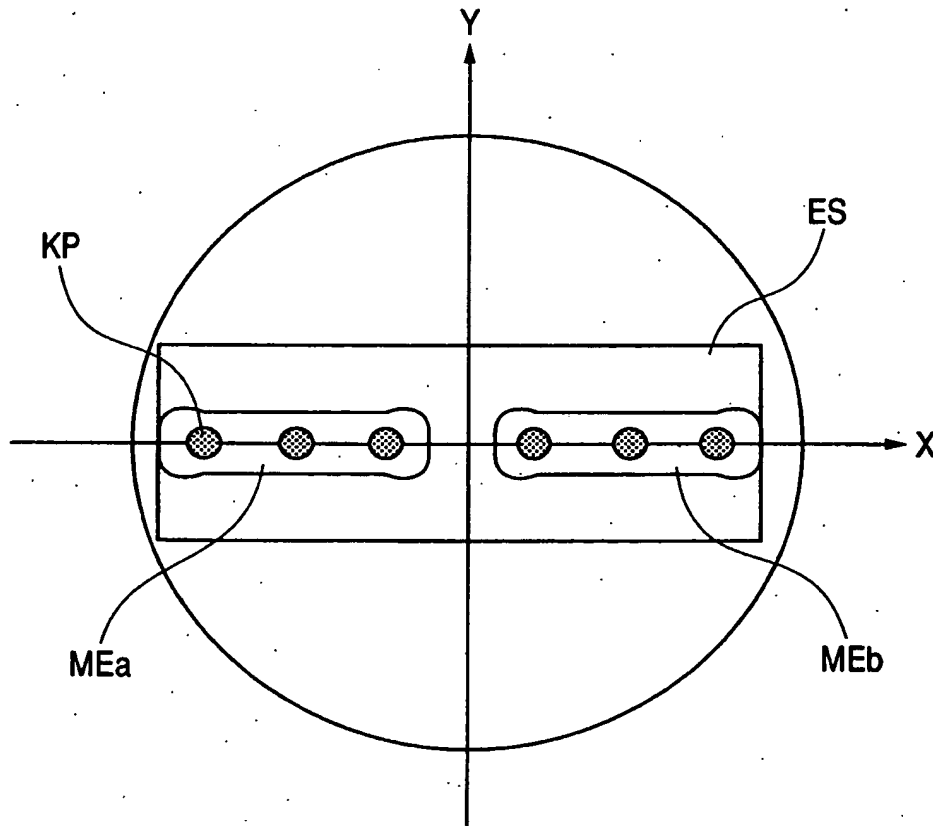


Approved for entry

11/5/2005

HN

FIG. 13



PRIOR ART